

USPTO Customer No. 25280
Serial No: 10/748,627

Inventor(s): Danielson et al
Case No: 5465A

IN THE CLAIMS

1. (Currently Amended) A polyester fiber or article comprising:

(a) a bluing agent, said bluing agent comprising at least two different additive compounds that, in combination, provide bluing effects within said fiber or article, and optionally at least one ultraviolet absorbing compound; wherein said combination of additive compounds when applied in such fiber or article exhibits at least one absorption peak and a λ_{max} between 565 and 590 nm; within said polyester fiber or article; and
(b) wherein said polyester fiber or article comprises a bluing agent concentration bluing agent in total parts by weight of said bluing agent of between about 0.001 and 100 parts per million of said polyester fiber or article. exhibits a half height bandwidth of at most 135 nm in relation to said at least one absorption peak.

2. (Currently Amended) The polyester fiber or article of claim 1 wherein said fiber or article further comprises an ultraviolet light absorbing compound.

A method for providing anti-yellowing benefits to a polyester fiber or article wherein said fiber or article optionally comprises at least one ultraviolet absorber compound, said method comprising providing a molten polyester formulation, introducing a bluing agent combination of compounds to said molten polyester wherein said bluing agent exhibits at least one absorption peak and a λ_{max} between 565 and 590 nm within said polyester fiber or article; and wherein said bluing agent exhibits a half height bandwidth of at most 135 nm in relation to said at least one absorption peak, and allowing the resultant polyester/bluing agent formulation to cool into a predetermined shape or form.

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3. (Currently Amended) A liquid solution or dispersion comprising at least one ultraviolet absorber compound and at least a first and a second two colorant compounds in combination forming a bluing agent, wherein said first and second colorant compounds each independently are capable of transmitting blue light, said bluing agent exhibiting s at least one absorption peak and a λ_{\max} between 565 and 590 nm within said polyester fiber or article; and wherein said polyester fiber or article with said bluing agent is adapted for providing anti-yellowing effects when applied to thermoplastics. ~~exhibits a half height bandwidth of at most 135 nm in relation to said at least one absorption peak.~~

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4. (New) The liquid solution of claim 3 wherein said bluing agent comprises at least two solvent violet dyes, each of said dyes being capable of absorbing blue light.

5. (New) A thermoplastic fiber or article comprising a bluing agent, said bluing agent comprising at least two additive compounds that, in combination, provide bluing effects within said fiber or article, wherein said combination of additive compounds when applied in such fiber or article exhibit at least one absorption peak and λ_{\max} between about 565 and 590 nanometers, said bluing agent provided in said thermoplastic fiber or article in a concentration level in the range of about 0.001 to about 100 ppm of the total parts of thermoplastic.

6. (New) The thermoplastic fiber or article of claim 5 wherein said fiber or article further comprises an ultraviolet light absorbing compound.

7. (New) The thermoplastic fiber or article of claim 5 wherein said two additive compounds each are liquids at ambient temperature.

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8. (New) The thermoplastic fiber or article of claim 5, wherein said two additive compounds each comprise solvent violet dyes.

9. (New) A method of reducing the yellowing of a thermoplastic product, said method comprising the following steps:

- (a) providing a molten thermoplastic formulation;
- (b) introducing a bluing agent composition into said molten thermoplastic formulation, said bluing agent composition comprising a combination of at least two additive compounds,
- (c) wherein said combination of additive compounds when applied in such fiber or article exhibits at least one absorption peak and λ_{\max} between about 565 and 590 nanometers; and
- (d) cooling said molten thermoplastic formulation to a predetermined product shape; and
- (e) wherein said bluing agent composition is provided in a concentration of less than about 100 ppm of the total parts of thermoplastic.

10. (New) The method of claim 9 wherein said molten thermoplastic formulation is formed from a feedstock, said feedstock comprising polyester.

11. (New) The method of claim 10, wherein said product shape comprises a container.

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12. (New) The method of claim 9 further comprising the addition of an ultraviolet light absorbing compound in connection with step (b).

13. (New) The method of claim 12, wherein said ultraviolet light absorbing compound comprises a benzotriazole.

14. (New) The method of claim 13, wherein said benzotriazole is applied in a concentration relative to the thermoplastic composition of between about 0.01% and about 1% by weight of the thermoplastic composition.